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ANNUAL REPORT
OF THE COUNCIL
OF THE
YORKSHIRE
PHILOSOPHICAL SOCIETY

FOR THE YEAR

1926

PRESENTED TO THE ANNUAL MEETING,

FEBRUARY 21st, 1927.

PRINTED BY ORDER OF THE COUNCIL.

1927.

[Issued April 26th, 1927.]



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FORM
OF A
BEQUEST TO THE SOCIETY.

Every person desirous of bequeathing to the Society any sum of Money, Specimens, Books, Instruments, or other Property, is requested to make use of the following form:—

*I give and bequeath to the Trustees, for the time being, of the Society established at York, called “**The Yorkshire Philosophical Society,**” for the use of the said Society, the sum of _____ to be paid out of such part of my personal estate as I may legally charge therewith. [Or here enumerate the effects or property intended to be bequeathed.] And I direct that the receipt of the Treasurer of the said Society, for the time being, shall be an effectual discharge to my Executors for the said legacy.*

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OF THE
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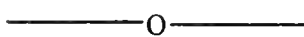
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The Yorkshire Philosophical Society.

(Founded 1822).

Patrons:

HIS MAJESTY THE KING.

HER MAJESTY THE QUEEN.

Trustees:

GEORGE A. AUDEN, M.D.

CHAS. E. ELMHIRST, J.P.

RT. HON. LORD DERAMORE.

EDWIN GRAY, M.A., LL.M., J.P.

President:

William Herbert St. Quintin, D.L., J.P., F.Z.S.

Vice-Presidents:

James Melrose, J.P.

W. Harvey Brook.

Richard Thompson.

S. Walker, F.E.S.

H. M. Platnauer, B.Sc.

W. A. Evelyn, M.A., M.D.

Frank Green, F.S.A.

(Cantab.)

Edwin Gray, M.A., LL.M., J.P.

Ald. W. H. Birch, J.P.

Chas. E. Elmhirst, J.P.

Col. W. A. White, J.P.

H. J. Wilkinson.

Council:

Elected 1925... J. L. Brockbank, M.A., H.M.I.

John A. Cooper.

Sydney H. Smith, F.Z.S.

J. Triffitt.

Elected 1926... E. Baker.

G. A. Potter Kirby.

Rev. A. Raine, B.A.

K. E. T. Wilkinson, LL.B., B.A.

Elected 1927... C. J. Bex.

Arthur Hurst, A.K.C.

Frank Terry.

Geoffrey Thompson, M.A.

Hon. Treasurer:

S. Walker, F.E.S.

Hon. Secretary:

Chas. E. Elmhirst, J.P.

Committees—

General Purposes and Finance Committee :

J. L. Brockbank.	Rev. A. Raine.
W. Harvey Brook.	Frank Terry.
John A. Cooper.	J. Triffitt.
Dr. W. A. Evelyn.	S. Walker.
A. Hurst.	Chas. E. Elmhirst, <i>Secretary</i> .

Garden Committee :

E. Baker.	Sydney H. Smith.
C. J. Bex.	Col. W. A. White.
Arthur Hurst.	S. L. Wyatt.
G. Potter Kirby.	

S. Walker, *Secretary*.

Lecture Committee :

C. J. Bex.	Sydney H. Smith.
J. L. Brockbank.	Frank Terry.
Dr. W. A. Evelyn.	Geoffrey Thompson.
Rev. A. Raine.	K. E. T. Wilkinson.

C. E. Elmhirst, *Secretary*.

Museum Committee :

W. Harvey Brook.	J. Scott.
Dr. W. A. Evelyn.	Geoffrey Thompson.
Arthur Hurst.	S. Walker.
W. H. St. Quintin.	H. J. Wilkinson.
Rev. A. Raine.	Dr. Collinge, <i>Secretary</i> .

The President, Hon. Secretary and Keeper are *ex-officio* members of all Committees.

York and District Field Naturalists' Section.

President :

Dr. J. S. Gayner.

Vice-Presidents :

W. E. Collinge, D.Sc., J. A. Dell, M.Sc., H. Sowden,
E. W. Tayler.

Hon. Secretaries: A. W. Ping, M.A., K. G. Chilman.

REPORT OF THE COUNCIL
OF THE
YORKSHIRE PHILOSOPHICAL SOCIETY,
21ST FEBRUARY, 1927.

ALTHOUGH the year 1926 has been comparatively speaking an uneventful one, the work of the Society has been carried on with undiminished vigour. The repair of the frontage of the Museum has been partly completed, as also the side walls of the Central Hall and the roofs of the Skeleton Room and the Lodge. These and other structural alterations have entailed a heavy call upon the Society's funds. The cottage adjoining the old Baths has been repaired and is now occupied by the Head Gardener. The Building Sub-Committee have made a thorough inspection of the Museum building, and have presented a Report to the Council, in which they make a number of recommendations, some of which it is hoped to carry out during 1927.

On this the thirtieth anniversary of Mr. Chas. E. Elmhirst's election as Honorary Secretary of the Society, your Council desire to offer him on behalf of themselves and the members their hearty congratulations, and to place on record their great indebtedness to him for the services he has always so willingly rendered and the great interest he has taken in the Society's welfare.

Considerable excavations have been made in the Museum Gardens and in the Multangular Tower by the Roman Excavation Committee, which have proved of great importance and interest. Your Council look forward to a full report to be published later.

On January 29th, Dr. Collinge represented the Society at the opening of the New Library and Rooms of the Yorkshire Archæological Society at Leeds; on May 1st, at the Congress of Yorkshire Archæological Societies, also held at Leeds; and

on October 16th on the occasion of the Jubilee of the Conchological Society of Great Britain and Ireland.

There has been a considerable improvement in the Saturday afternoon attendances, and the number of visitors to the Gardens and Museums exceeds that of any previous year.

The following is a full list of the Lectures delivered in the Tempest Anderson Hall during the past year.

Thursday, January 7th.—“The Tragedy of Napoleon.” By Rosslyn Mitchell, M.A., LL.B., M.P.

Thursday, January 21st.—“Changing India.” By George Pilcher, M.P.

Thursday, February 4th.—“Gardens in Mediæval, Tudor, and Stuart Times.” By Miss Eleanor Sinclair Rohde.

Thursday, February 18th.—“Timbuctu the Mysterious.” By Sir Curtis Lampson, Bt.

Thursday, March 4th.—Lantern Night.

Thursday, October 7th.—“Russia, Yesterday, To-day, and a forecast of To-morrow.” By F. A. Mackenzie, Esq.

Thursday, October 21st.—“Ancient Man in North-East Yorkshire.” By Frank Elgee, Esq.

Thursday, November 4th.—“Furthest North on the Tigris.” By Lt.-Comm. A. S. Elwell Sutton, R.N.

Thursday, November 18th.—“Wild Life in the Shetlands.” By William Moffat, Esq.

Thursday, December 2nd.—“Garden Craft in the Bible.” By Miss Eleanor Sinclair Rohde.

Thursday, December 16th.—“The Romance of Bird Migration.” By H. W. Robinson, Esq., M.B.O.U.

The General Monthly Meetings, held at 5 p.m., on the first Monday in the month, from October to March, have shown a much improved attendance.

The following Communications have been laid before the meetings :—

February 1st.—“Primitive Breeds of Sheep.” By Dr. J. S. Gayner.

“An Irish Stone Drinking Cup,” By Dr. Walter E. Collinge, F.S.A.

March 1st.—“Two Notes on the History of the Drama in York in the reigns of Elizabeth and James I.” By the Rev. A. Raine, B.A.

“The Earliest Extant Commercial Treaty with an English Kingdom.” By Dr. J. S. Gayner.

October 4th.—“Technical Notes on the St. William’s Window in York Minster.” By John A. Knowles, F.S.A.

November 1st.—“The work of the Geological Survey in Yorkshire,” By C. E. N. Bromehead, B.A.

“The Post-Roman Mound of York.” By the Rev. A. Raine, B.A.

During the year your Council by a unanimous vote elected as Honorary Members of the Society :—Cyril Fox, Ph.D., F.S.A., Director of the National Museum of Wales ; Professor Sir Arthur Keith, M.D., LL.D., F.R.S., Conservator of the Museum and Hunterian Professor of the Royal College of Surgeons, London ; C. R. Peers, C.B.E., M.A., F.B.A., F.S.A., Chief Inspector of Ancient Monuments, H.M. Office of Works, London ; Alderman Edward Wooler, F.S.A., Darlington ; and Henry Woods, M.A., F.R.S., Sedgwick Museum, Cambridge.

Your Council regret to record the decease of two of the Society's Honorary Members, viz., Mr. G. W. Lamplugh, F.R.S., and the Rev. T. Gough, B.Sc. ; and Mr. Walter H. Brierley, F.S.A., a member who has ever taken a keen and active interest in the Society's welfare, and has frequently rendered considerable assistance in its work.

The Society has lost by death and resignation 50 Members, 3 Associates, and 9 Lady Subscribers, whilst 34 new Members have been elected. The total number of Members on December 31st, was 572.

FIELD NATURALISTS' SECTION. The programme for the year has been carried through very successfully, and the Section may be said to be in a flourishing condition.

The lectures and excursions during 1926 have been as follows :—

Jan. 5th.—Lantern Lecture : " Our Yorkshire Birds of Prey. E. W. Tayler.

Jan. 20th.—Botanical Recorder's Report. J. H. Evers.

Feb. 10th.—Lantern Lecture : " Local Fungi." A. W. Ping, M.A.

Feb. 24th.—Geological Recorder's Report. S. Melmore, B.Sc.

Mar. 10th.—Lantern Lecture : " A Naturalist with a Camera." Riley Fortune, F.Z.S.

Mar. 24th.—Vertebrate Zoology Recorder's Report. V. G. F. Zimmermann.

April 7th.—Annual Meeting.

Four excursions have been held during the summer months, as follows :—

May 29th.—A Visit to the new Gravel Pits and the adjacent Woods at Sand Hutton.

June 5th.—A Visit to New Earswick following an investigation of the River Foss in conjunction with the Yorkshire Conchological Society.

July 21st.—A Visit to Poppleton when the Tulip Tree in the grounds of Poppleton Hall, was seen in perfect bloom.

Oct. 9th.—A Fungus Foray, at Sandburn Common. This was followed by an exhibition of about 70 different species collected during the Foray. and by a Lantern Lecture on Fungi, by Mr. F. A. Mason, of Leeds.

The Lectures for the Winter Session of 1926 :

Oct. 6th.—“The Black-headed Gull, its Nest and Eggs.” F. Vear and V. G. F. Zimmermann.

“Note on the Economic Status of the Gull.” Dr. W. E. Collinge.

Oct. 20th.—General Exhibit Night.

Nov. 3rd.—“Some Geological Problems in the Vale of York.” J. A. Dell, M.Sc.

Nov. 17th.—Conchological Exhibits and Report. H. Sowden.

Dec. 1st.—“Skeletons.” A. J. A. Woodcock, M.Sc.

Dec. 15th.—Entomological Exhibits and Report. A. Smith.

We take this opportunity of pointing out that the Lantern Lectures of the Field Naturalists' Section are open to members of the Yorkshire Philosophical Society, and that we should welcome their presence.

NEW MEMBERS, ELECTED IN 1926.

Booth, G. W., 3, Longfield Terrace.
 Bowe, Mrs. A. C., Carlton Hotel, Lausanne, Switzerland.
 Briggs, Rev. F. J., 3, Marlborough Villas.
 Cameron, Major-Gen. N. J. G., H.Q. 49th West Riding Division,
 8, St. Leonards.
 Chambers, E., 42, Queen Anne's Road.
 Chapman, R. H., Blossom Street.
 Davidson, G., Div. Gen. Manager, L. & N. E. Ry., York.
 Derby, Miss C. A., 5, Telford Terrace.
 Dryland, H. H., 8, Grosvenor Terrace.
 Ellison, Capt. C. C., 22, St. Olave's Road.
 Etherington, J. W., 44, Petergate.
 Fairfax, Miss Eve, Bilbrough Manor.
 Frost, Major, 21, Park Grove.
 Glew, J. F., J.P., 12, Charles Street.
 Green, Mrs., "Nunroyd," The Mount.
 Harrison, Miss M. G., Estcourt, 3, Bootham Grange.
 Hopkins, Major G. R., R.A.O.C., Petergate House.
 Hopkins, R., 48, Bishopthorpe Road.
 Horsfield, Miss M., 7, Longfield Terrace.
 Jewitt, Miss A. M., "The Cedars," Haxby.
 Kershaw, H., 34, Bootham.
 Lumley, Miss L. F., Haxby School.
 Mackenzie, H. J., M.B., C.M., 254, Bishopthorpe Road.
 Miller, J., L. & N.E. Ry., York.
 Mills, Miss A. M., B.A., 103, Petergate.
 Pritt, W. A., "Kenmare," 48, Queen Anne's Road.
 Rawling, A., 9, North Parade.
 Rymer, E. J. L., "West Bank," Heworth.
 Segar, Rev. H., 24, St. Mary's.
 Stevens, Miss G. M. S., 19, Portland Street.
 Walker, Miss E. Carmichael, 14, Wenlock Terrace.
 Wood, P., 2, Sycamore Terrace.
 Woodcock, A. J. A., M.Sc., F.E.S., Clifton Manor.
 Woodall, F., 18, Colliergate.

DEATHS.

HONORARY MEMBERS.

Gough, Rev. T., B.Sc.
 Lamplugh, G. W., F.R.S.

MEMBERS.

Beeson, T. S., 42, Queen Anne's Road.
Brierley, W. H., F.S.A., St. George's Place.
Hick, W., Museum Street.
Pawlett, F. W., 35, Bootham.
Plows, Mrs. R., 56, Lord Mayor's Walk.
Prince, R. S., 12, Park Crescent.
Spofforth, Mrs. E., 28, North Parade.
Thompson, Col. R. F. Meysey, Westwood Mount, Scarborough.
Waite, Mrs. J. E., 2, Duncombe Place.
Wright, Mrs. M. H., 22, Burton Lane.

LADY SUBSCRIBERS.

Baker, Mrs., 2, Duncombe Place.
Barstow, Miss E., Garrow Hill.
Smith, Mrs. Milnes, 19, Bootham Terrace.

ASSOCIATE.

Hood, W., M.D., Tower Place.

RESIGNATIONS.

Members, 40. Lady Subscribers, 6. Associates, 2.

DEATH AND RESIGNATION.

Members	50
Lady Subscribers	9
Associates	3
	—
	62

NEW MEMBERS.

34

TOTAL MEMBERSHIP ON 31st DECEMBER,
1926.

Honorary Members	30
Members	456
Lady Subscribers	70
Associates	16
	—
	572

REPORT OF THE GARDEN COMMITTEE

FOR THE YEAR 1926.

Your Committee are pleased to observe a growing interest in the Gardens by a considerably greater number of the members.

A large number of new trees and shrubs have been planted and old stocks of bulbs, &c., renewed.

Further alterations and repairs have been necessary to the Greenhouses. At no distant date the rebuilding of these will have to be considered.

The Head Gardener in September took up his residence in the Cottage, the repair of which and the alterations in this part of the Gardens are a great improvement.

Many of the walks have been re-laid and others repaired, and new seats have been added.

The interest in the Botanical Garden is sustained and excellent work has been done therein by the temporary assistant.

Your Committee would again appeal to all members and their children not to throw paper, etc., about the grounds, but to use the waste paper baskets provided.

THE TREASURER IN ACCOUNT WITH THE YORKSHIRE

<i>Last Year</i>	Dr.	INCOME.						£ s. d.			£ s. d.		
	<i>Subscriptions:</i>												
	Members							893	8	0			
	County Members							3	1	0			
	Lady Subscribers							73	0	0			
	Associates							20	0	0			
	Ticket Holders (less Refunds)							8	0	0			
	Arrears							10	11	6			
	Subscriptions for 1927 paid in advance							19	0	0			
	Keys of Gates							114	13	6			
1189								<hr/>			1141	14	0
	<i>Rents:</i>												
	St. Mary's Lodge							65	0	0			
	Shop, No. 10 Bootham							25	0	0			
	York Waterworks Co.—Shed							15	0	0			
	Do. Light							0	1	0			
	Mr. Hill—Notice Board							0	1	0			
	Corporation of York, Lease of Exhibition Land							2	0	0			
	Post Office—Wayleaves							1	2	0			
	York Diocesan Training College—Boat Yard							5	0	0			
	Baths Cottage, Marygate							4	8	0			
	Shop, No. 12 & 14 Bootham							75	0	0			
	Letting of Rooms for Lectures and Meetings							102	2	0			
328								<hr/>			294	14	0
2931	The late Dr. Anderson's Bequest (<i>For particulars see p. 14</i>)										2006	1	0
	Interest on £918 8s. 9d. India 3% Stock												
21	(the late Mr. Rawdon's Bequest)										22	1	0
	„ £20 Deposit at Midland Bank										0	10	0
27	Whitsuntide Admission Fees, less expenses										25	9	6
27	Sale of Picture Postcards, Plans, Reports, etc.										45	3	4
	„ Old Material										0	15	3
	„ Admission Tickets										1	10	0
549	Gate Money										600	0	0
	Grant from Corporation of York towards Meteorological Department										5	0	0
	Bowling Green Members' Subscriptions										22	10	0
	„ „ Locker Rents and Green Fees, etc.										2	3	0
	Donations for holding of Pilgrimage and Garden Fête										7	2	0
	Discount										0	4	0
	Bank Interest										6	5	0
								<hr/>			4181	2	1
	Excess of Expenditure over Income										438	6	4
								<hr/>			£4619	8	5
								<hr/>					
	Balance in the hands of Treasurer 31st Dec., 1926							219	2	1			
								£219	2	1			

I have audited the Books of the above Society, and from the information and explanations furnished, am of the opinion that the Accounts are in order and correct.

January 25th, 1927.

FREDK. ABRAHAMS.

PHILOSOPHICAL SOCIETY FOR THE YEAR ENDING 31ST DEC., 1926.

Last Year	EXPENDITURE.							Cr.	
								£ s. d.	£ s. d.
	<i>Rent, Rates and Taxes :</i>								
	Crown Rent	...	...	...	...	...	...	1 0 0	
	Corporation Rent (less tax)	...	...	...	...	...	...	17 0 0	
	Property Tax and City Rates	...	...	...	...	...	...	63 18 1	
	Waterworks Company's Rates	...	...	...	...	...	...	7 15 2	
	Gardeners' License	...	...	...	...	...	...	3 0 0	
115									92 13 3
	<i>Insurance :</i>								
	Fire Premiums	...	...	...	...	...	...	18 16 0	
	Employers' Liability Premium	...	...	...	...	...	...	6 11 8	
	Fidelity Guarantee Premium	...	...	...	...	...	...	1 10 0	
	National Health and Unemployment Insurance	...	...	...	...	...	...	24 14 3	
44									51 11 11
17	Telephone Rent and Calls	...	...	...	...	...	...		14 13 11
	<i>Salaries and Wages :</i>								
	Museums—	...	...	...	...	...	...	1671 15 0	
	Lodge and Gardens	...	...	...	...	...	...	688 4 8	
	Staff Pensions	...	...	...	...	...	...	202 0 0	
2525									2561 19 8
	<i>General Additions, Repairs, and Expenses :</i>								
	MUSEUMS—								
	Additions	...	...	...	...	...	...	55 11 7	
	Repairs	...	...	...	...	...	...	24 0 8	
	Ceramic Case	...	...	...	...	...	...	125 0 0	
	General Expenses	...	...	...	...	...	...	107 15 8	
310									312 7 11
	GARDENS—								
	General Expenses	...	...	...	...	...	...	105 8 7	
	Bowling Green	...	...	...	...	...	...	8 9 1	
100									113 17 8
	ESTATE—								
	General Repairs, etc.	...	...	...	...	...	...	140 13 4	
	Repairs to Museum	...	...	...	...	...	...	497 7 5	
	„ „ Hospitium	...	...	...	...	...	...	2 2 0	
	„ „ Baths Cottage, Marygate	...	...	...	...	...	...	272 0 11	
490									912 3 8
901									1338 9 3
	<i>Gas, Coal, Coke, and Electricity :</i>								
174	Coal and Coke	...	...	...	...	...	...	135 5 7	
16	Gas	...	...	...	...	...	...	12 6 5	
44	Electricity	...	...	...	...	...	...	23 17 10	
234									171 9 10
50	Library—Books and Binding	...	...	...	...	...	...	...	59 6 5
89	Lectures	...	...	...	...	...	...	...	94 10 0
	<i>Printing and Stationery :</i>								
37	Annual Reports and Proceedings	...	...	...	...	...	...	61 17 6	
39	General Printing and Stationery	...	...	...	...	...	...	40 17 10	
									102 15 4
23	Picture Postcards	...	...	...	...	...	...	...	46 10 0
20	Postages and Receipts	...	...	...	...	...	...	...	21 12 9
	Cheque Book	...	...	...	...	...	...	...	1 12 0
	Donation to York Roman Excavation Fund	...	...	...	...	...	...	...	25 0 0
	„ „ Knaresborough	...	...	...	...	...	...	...	10 0 0
	Cost of removing Tapestry Map	...	...	...	...	...	...	...	27 4 1
									<u>£4619 8 5</u>
	Balance in hands of Treasurer, 31st Dec., 1925							657 8 5	
	Excess of Expenditure over Income, 1926	...						438 6 4	
								<u>£219 2 1</u>	

S. WALKER, *Hon. Treasurer.*

THE LATE DR. ANDERSON'S BEQUEST.

			£	s.	d.
Interest on	£8,000 New Zealand 4 % Inscribed Stock	...	...	256	0 0
„ on	£5,700 London & North Eastern Railway 4 % First Preference Stock	... ..	...	182	8 0
„ on	£2,500 London & North Eastern Railway 4 % Second Guaranteed Stock	... ..	...	80	0 0
„ on	£8,000 Canada 4 % Registered Stock	... ..	...	256	0 0
„ on	£3,219 3s. 5d. Bank of England Stock	... ..	...	309	0 10
„ on	£5,777 2s. 6d. South Indian Railway 4 % Registered Debenture Stock	... ..	...	184	17 4
„ on	£4,314 13s. 2d. 5 % War Loan Stock	... ..	...	215	14 6
„ on	£2,000 3½ % Conversion Loan	... ..	...	72	0 0
„	£45 Deposit at Midland Bank	... ..	...	1	2 0
Rents of Shops and Dwelling-houses, Nos. 32 and 34 Bootham	... ..	...	...	65	0 0
Income Tax recovered	... ..	...	...	383	18 4
				<hr/> <hr/>	
				£2006	1 0

Memo :—The above items are shown less tax, if deducted.

THE TREASURER'S ACCOUNT IN CONNECTION WITH THE FUND FOUNDED BY THE LATE

WM. REED, ESQ., FOR SPECIFIC PURPOSES.

Dr.		INCOME.		EXPENDITURE.		Cr.	
			£ s. d.			£ s. d.	
To Balance brought forward...	...	...	10 10 3	By New Books	...	...	18 4 6
Interest on York Corporation 3 % Redeemable Stock, less tax	...	...	...	Excess of Income over Expenditure	...	...	11 10 9
Interest on £50 placed on Deposit with Midland Bank Ltd.	1	5	0				
Income Tax returned	...	...	3 12 0				
			£29 15 3				£29 15 3

BALANCE SHEET.

	£ s. d.		£ s. d.
Amount of Fund on 31st December, 1926	...	Amount invested in York Corporation 3 % Redeemable Stock	...
	661 10 9		600 0 0
		Amount placed on Deposit with the Midland Bank Ltd.	50 0 0
		Balance	11 10 9
	£661 10 9		£661 10 9

S. WALKER, Hon. Treasurer.

Audited and found correct,

FREDK. ABRAHAM.

January 25th, 1927.

CENTENARY FUND.

LIST OF SUBSCRIBERS.

				£	s.	d.
Champney, John E.	...	...	...	105	0	0
St. Quintin, W. H.	...	...	...	100	0	0
Bell, Sir Hugh, Bt.	...	...	...	50	0	0
Elmhirst, Chas. E.	...	...	...	25	0	0
Iron and Steel Institute	...	...	...	25	0	0
Gainsford, W. D.	...	...	...	20	0	0
Photographic Convention of United Kingdom				12	12	0
Penty, Fred T.	...	...	...	12	12	0
Institute of Chemistry	...	...	...	10	10	0
Thompson, Richard	...	...	...	10	10	0
Halstead, William	...	...	...	10	0	0
Bishop Crosthwaite (the late)	...	...	...	8	0	0
Crombie, George (the late)	...	...	...	6	4	0
Bootham School, The Governors of	...			5	5	0
Evelyn, Dr. W. A.	...	...	...	5	5	0
Leonard, G. N.	...	...	...	5	5	0
Platnauer, H. M.	...	...	...	5	5	0
Scarboro' Philosophical and Archeological Society (per J. Simpson)	...	...		5	5	0
Cobb, Cecil H.	...	...	...	5	0	0
Wolstenholme, Geo. J.	...	...	...	5	0	0
York City Education Committee	...	...		5	0	0
Smith, Miss A. E.	...	...	...	3	3	0
Brockbank, J. L.	...	...	...	2	2	0
Building Societies' Association (per Mr. A. C. Lister)	...	...	...	2	2	0
Mount School (per Miss H. Winifrid Sturge)				2	2	0
Northern Architectural Association	...			2	2	0
Rowntree, Mr. and Mrs. Arthur	...	...		2	2	0
Walker, S.	...	...	...	2	2	0
Danesfort, Lord	...	...	...	2	0	0
Gray, Edwin	...	...	...	2	0	0
Seton, E. T.	...	...	...	2	0	0
Fletcher, W. J.	...	...	...	1	1	0
Kilvington, Fred W.	...	...	...	1	1	0
Knowles, Miss Alice	...	...	...	1	1	0
Shipley, Sir Arthur E.	...	...	...	1	1	0
Challenger, H. L.	...	...	...	1	0	0
Cudworth, Mrs.	...	...	...	1	0	0

	£	s.	d.
Davy, J. Burt	1	0	0
Lilley, H. T.	1	0	0
Marsh, J. E.	1	0	0
Hobson, Bernard	0	10	6
Jesper, William A.	6	10	6
Girlington Baptist Social Institute ...	0	10	0
Seaton, Mrs.	0	10	0
Start Miss L. E.... ...	0	10	0
Thoresby High School (per Miss D. Shepherd)	0	10	0
Thackray, E. A.	0	5	0
Elmfield College Boys	0	4	0
Balance from Wireless Demonstration ...	6	16	0
Collected in Museum	11	10	8
Bank Interest	15	11	0
Dividend on 5% War Stock	8	4	6
	<hr/>		
	£ 513	4	2
	<hr/>		

Donations to the above Fund, which may be spread over five years, should be sent to Dr. Collinge, Keeper of the Museum, or to the Hon. Treasurer, S. Walker, Esq.

CENTENARY FUND.

	£	s.	d.
Donations & Bank			
Interest received	513	4	2
	<hr/>		
	£ 513	4	2
	<hr/>		

	£	s.	d.
Printing Appeal,			
Stationery, &c.	144	0	1
Postage ...	17	16	0
£328/19/9 5% War			
Stock, 1929-47.	336	0	0
Balance	15	8	1
	<hr/>		
	£ 513	4	2
	<hr/>		

Balance at Midland			
Bank ...	15	8	1
5% War Stock	328	19	9
	<hr/>		
Amount of Fund	£ 344	7	10
	<hr/>		

21st February, 1927.

THE YORKSHIRE MUSEUM,
YORK.

Report
of the
Museum Committee
FOR THE YEAR 1926.

PRINTED BY ORDER OF THE COUNCIL.

1927.

The Yorkshire Museum,

YORK.

Keeper :

WALTER E. COLLINGE, D.Sc., M.Sc., F.S.A., F.L.S.,
M.B.O.U., HON. F.R.H.S.

Honorary Curators :

ARCHÆOLOGY - - - - - { W. HARVEY BROOK.
W. A. EVELYN, M.A., M.D. (Cantab.)

ROMAN ANTIQUITIES - - - Rev. A. RAINE, B.A.

BOTANY - - - - - H. J. WILKINSON.

ZOOLOGY - - - - - { W. H. ST. QUINTIN, F.Z.S.
S. WALKER, F.E.S.

ASTRONOMY - - - - - J. SCOTT.

NUMISMATICS - - - - - GEOFFREY THOMPSON, M.A.

CERAMICS - - - - - A. HURST, A.K.C.

Sub-Curator : W. WATSON.

Assistants : { MISS E. HOLMES.
FRANCIS T. G. WHITE.

Chief Clerk : ARTHUR COLLEY.

Museum Attendants :

WILLIAM RAFTON and MRS. HORSFALL.

THE YORKSHIRE MUSEUM.

REPORT OF THE MUSEUM COMMITTEE FOR THE YEAR 1926.

STEADY and progressive work has been continued throughout 1926. Considerable improvements have been made in the arrangement and method of exhibition of different collections, but in all departments the need of greater space is acutely felt. The donations have been numerous and valuable.

An important change has been made in the Central Hall. The Sheldonian Tapestry Map of Worcestershire has been loaned to the Victoria and Albert Museum, London. After the re-decoration of the wall, the portraits of the Founders, past members of the Staff and Benefactors, were re-hung and add greatly to the appearance of the Hall.

Considerable progress has been made with the re-labelling of the various collections. Since March, 1921, upwards of 5,000 printed and 7,000 hand-written labels have been added.

From July 14th to the 28th, a special exhibition of Wesley relics and others illustrative of early Wesleyan Methodism in York, were shown in the Central Hall, on the occasion of the Wesleyan Methodist Conference. A large number of rare and very interesting specimens were obtained on loan and upwards of seven hundred members of the Conference viewed the same.

As in previous years, the Tempest Anderson Hall and adjoining rooms, have frequently been used for various Congresses and other meetings having objects akin to those of the Society.

The visitors have been numerous: amongst the various organizations that have visited the Museum were the American and Continental members of the International Hotel Alliance, on April 13th; the Derby Railway Institute Photographic Society, on June 12th; the Yorkshire Employers' Federation, on June 21st; the members of the Quatnor Coronati Lodge, No. 2076, on July 1st; Mr. Van Diss and party of American Public School Boys, on July 8th; the Members of the Wesley Guild, on July 14th; the Members of the York Branch of Toc H, on August 26th; the Sheffield Head Teachers' Association, on September 4th; Members of the Thoresby Society, on September 18th; the Catenian Association, on September 19th; and parties from different Yorkshire Schools and other organizations.

The Keeper has given upwards of thirty short addresses on the different collections, to various parties of visitors; a number of these have been to artizans or children on Saturday afternoons.

The Yorkshire Numismatic Society held its July meeting in the Museum Library, on July 31st.

The Yorkshire Architectural and York Archæological Society continues to hold its meetings and house its Library in the Museum.

The Autumn Course of Lectures of the York University Extension Society was given in the Tempest Anderson Hall.

EDUCATIONAL WORK.—Considerable use has been made by the City Educational authorities of the Museum Collections, and the 1924 scheme continues to work satisfactorily.

Many repeat visits have been made by children from different parts of the County.

The provision of Guides, etc. (British Museum, Natural History, Victoria and Albert Museum, etc.) in the various Galleries, was introduced by the late Hon. Librarian some years back. During the past year these have been supplemented, and over two hundred visitors have intimated their appreciation of this feature.

The collections or specimens have been studied by Mr. Mr. Robert C. Bosanquet, M.A., F.S.A., of Alnwick; Mr. T. H. Withers, of the British Museum (Natural History); Mr. R. W. Murray, of Churchdown; Mr. W. A. Arkell, B.A., F.G.S., of Oxford; Dr. Johs. Böe, Curator of the Archæological Department, Bergens Museum, Norway; Miss Barbara Briggs, F.Z.S., of Wakefield; Mr. W. A. Thorpe, Victoria and Albert Museum, London; Dr. R. Mortimer Wheeler, M.A., F.S.A., the London Museum; Prof. Baldwin Brown, M.A., F.R.S., the Sedgwick Museum, Cambridge; Mr. John W. Taylor, M.Sc., of Leeds; Mr. C. R. Peers, C.B.E., M.A., F.S.A., of Wallingford; Mr. Horace C. Beck, F.S.A., of Fittleworth.

Numerous specimens have been loaned to various specialists. The number of inquiries continues to increase.

Turning to the different departments of the Museum:—

ETHNOLOGY.—Numerous additions have been made to the Collections, which have further congested this department. As pointed out in last year's report the need of further space for exhibition is badly required. If the extensive collections now in the Museum could be properly arranged and exhibited they would form a remarkably fine andrological department of the greatest value to students and the public generally.

GEOLOGY.—The need of a further assistant to take charge of the geological, palæontological and mineralogical collections becomes more pressing as the collections steadily increase, and more space is needed for storing both named and unnamed specimens. All the specimens are in good condition and further progress has been made in re-labelling and revising the nomenclature. A catalogue of the types in the Collection is very desirable and badly needed.

ROMAN ANTIQUITIES. The past year has not been marked by any noteworthy addition to the Roman collections. The Honorary Curator has given most of his available time to the Excavations, of which an account appears elsewhere in this Report. During the course of these Excavations many objects of historical interest have been discovered, which will come

into the Museum. The Honorary Curator, with the help of Dr. Davies-Pryce, has begun the rearrangement and re-labelling of Samian pottery, and it is hoped that much progress will be made during 1927.

ZOOLOGY.—The arrangement of the Collection of Marine Shells in the Geological gallery has been almost completed. All the cabinet collections are in good condition. The whole of the Zoological gallery has been cleaned and rearranged during the year. Thanks to the kindness of Mr. W. H. St. Quintin, a number of new specimens have been added to the collection of Birds.

Entomology.—Some additions have been made during the Year to the Gallery Cabinet of British Lepidoptera. The other Collections are all in good condition.

ASTRONOMY.—The telescope and transit instrument have been overhauled and are now in good order, and various observations have been taken. The Honorary Curator regrets that so few of the Members take any interest in this branch of the Society's work.

NUMISMATICS.—The rearrangement and separation of duplicates is proceeding. At the present time the silver and copper coins of England, Scotland and Ireland, from 1558 onwards, the tokens of the 17th, 18th, and 19th centuries, and the coins and tokens of the British Empire, have been completed.

Progress is being made with the Greek, Roman, British, Anglo-Saxon and later coins, and with medals and sundry Continental coins and Abbey Tokens.

The Collection has received several gifts from York residents and others interested in the Society. These gifts have been most welcome, and it should be mentioned that the Society is particularly anxious to complete its series of all coins which have any York association.

CERAMICS.—The Ceramic Collections have been maintained in good order during the past year. A good many additional specimens have been acquired in most of the sections, but

particularly in the mediæval tiles of which we now possess a good assortment. Progress has also been made in labelling, and in other preliminary work necessary before the specimens can be catalogued.

THE LIBRARY.—Further additions acquired during the year include Archæologia, 4 volumes ; Dechelette's Vases Cera-miques Ornés de la Gaule Romaine, 2 vols. ; Mattingly and Sydenham's Roman Imperial Coinage, vols. 1 and 2 ; Wheeler's Prehistoric and Roman Wales ; Brønsted's Early English Ornament ; Romische Limes in Osterreich, 15 vols. ; Keith's Antiquity of Man, 2 vols. ; Lang's Butterflies of Europe, 2 vols. ; and Thoresby Society publications, 4 vols. The need of considerably more space is very acutely felt.

61 Volumes have been added by purchase, and 49 by presentation, in addition to a large series of unbound memoirs.

The number of volumes borrowed was 132.

METEOROLOGY.—*Statistics of Station* : Longitude, $1^{\circ} 5' W.$; Latitude, $53^{\circ} 57' N.$; height above mean sea level, 56 feet.

The *rainfall* for 1926 was below normal, being only 21.75 inches, 2.35 inches below the average for over 50 years. The rain was fairly spread over the year, with the exception of March and December (when only 0.52 and 0.59 inches respectively fell during the whole month), one month reaching 3 inches, 11.64 inches falling in the second half-year.

Temperature ranged from $84^{\circ} F.$ on July 13th, and 14th, to $17^{\circ} F.$ on January 17th ; the range of temperature for 1926 being thus $68^{\circ} F.$ as against $70^{\circ} F.$ for 1925. A mean pressure of 1013.3 millibars (1000 millibars= 29.531 inches of mercury) at M.S.L., (corrected for diurnal variations), has been recorded, as against 1012.6 millibars for 1925. November gave the lowest mean for the year, 1001.2 millibars, January next with 1007.4 millibars. December was highest 1025.0 millibars, and September next with 1017.8 millibars. The extreme range was 1.60 inches as compared with 1.57 inches in 1925. The highest reading of the barometer was taken December 23rd and 24th, at 9 a.m., viz. : 30.87 inches, and the lowest on November 20th, at 9 p.m., viz. : 28.54 inches.

Snow or Rain fell to the amount 21·75 inches or 552·5 mm., as against 21·40 inches or 514 mm., for 1925, an increase of 0·35 inches or 53·2 mm. for the year. The heaviest fall of the year occurred on May 26th, when 17·18 mm. (0·70 inches) fell. The cumulative totals for the years since 1820 are, for the heaviest monthly falls, August 5685·23 mms., October 5506·37 mms. and July 5247·19 mms.

Observations of Winds show that during 1926 we had "strong" winds on 6 days (force 4 to 7 on scale 0-12) 4 days more than 1925, and "calm" on 1 day as compared with 5 in 1925. The chief winds have been observed as S. (95), W. (48), N (79), S.E. (17), S.W. (51), and N.W. (22).

Thunder was heard on 14 days, snow or sleet fell on 11 days, as against 22 in 1925; and there were hailstorms on 7 days, as against 6 days the previous year.

Bright Sunshine was recorded 1244·3 hours as against 1234·3 hours in 1925, an increase of 10·3 hours for the year.

The daily mean was 3·41 hours, and the percentage of possible sunshine 28, the same as in 1925.

It is urgently requested that any discovery of Archæological interest in the neighbourhood may be brought to the notice of the Keeper of the Museum, or the Honorary Curators, as early as possible.

The Keeper of the Museum will be pleased to give any information in his power, and may be seen daily, Museum engagements permitting.

CLIMATOLOGICAL SUMMARY—THE YORKSHIRE MUSEUM, YORK, 1926.

Latitude 53° 57' N., Longitude 1° 5' W. Gravity Correction + 0·8 mb. Height above Mean Sea Level 56 ft.

1926.	Mean Pressure corrected to 32° F. and Lat. 45°				Air Temperature.		Humidity.				Mean Amount of Cloud. 0—10.		Cloud Amount, 9 a.m. No. of Observations.					Force.			Wind, No. of Observations, 9 a.m.										
	9 a.m.		9 p.m.		9 a.m.	9 p.m.	Depression of Wet Bulb.		Vapour Pressure.		Percentage.		9 a.m.	9 p.m.	0	1-3	4-6	7-9	10	8 or more	4-7	1-3	Calm	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
	mb.	ins.	mb.	ins.	°	°	°	°	mb.	mb.	%	%																			
Jan.	1008·8	1007·4	29·791	29·748	38·5	39·7	1·2	1·5	7·1	7·2	89	86	8·5	7·5	2	1	4	1	23	0	0	31	0	1	4	1	3	17	2	3	0
Feb.	1009·2	1009·4	29·804	29·808	42·7	43·4	1·7	1·5	7·7	8·2	85	87	7·7	8·6	3	3	1	2	19	0	0	28	0	2	6	1	1	11	3	4	0
Mar.	1016·7	1016·2	30·023	30·008	43·8	42·4	3·4	2·5	7·1	7·1	72	79	6·2	6·2	4	6	5	4	12	0	4	27	0	3	6	3	0	3	6	5	5
April	1011·0	1010·8	29·857	29·818	48·7	46·9	3·5	2·5	8·8	8·9	74	81	8·3	5·9	3	1	1	7	18	0	0	30	0	7	4	1	2	7	3	4	2
May	1012·0	1011·9	29·886	29·882	50·7	48·6	4·1	3·2	9·1	9·0	71	77	7·3	5·9	3	2	6	8	12	0	0	31	0	11	5	2	2	7	2	1	1
June	1012·5	1012·6	29·901	29·903	56·5	56·4	4·0	3·2	11·9	12·2	75	80	8·3	7·2	1	1	5	4	19	0	0	30	0	10	3	0	1	6	5	3	2
July	1016·1	1016·3	30·007	30·013	63·7	61·8	5·2	3·6	14·6	15·1	72	80	7·6	6·4	2	1	7	9	12	0	0	31	0	11	3	1	2	4	5	3	2
Aug.	1016·4	1015·9	30·017	30·001	61·5	61·2	4·4	3·9	13·7	14·2	75	77	5·6	6·2	6	5	8	1	11	0	1	30	0	5	2	0	1	10	4	5	4
Sept.	1017·8	1017·8	30·056	30·056	56·5	56·3	3·0	2·5	12·9	12·9	81	85	7·0	3·9	4	3	5	3	15	0	0	30	0	7	1	0	1	6	8	6	1
Oct.	1012·4	1011·9	29·897	29·883	45·5	44·1	2·7	1·6	7·9	8·5	78	87	6·0	5·6	6	5	4	2	14	0	1	30	0	10	1	2	1	6	5	5	1
Nov.	1001·6	1001·2	29·579	29·567	40·8	41·6	1·4	1·2	7·7	8·1	87	90	7·6	6·6	3	2	4	3	18	0	0	30	0	4	2	0	3	15	5	0	1
Dec.	1025·0	1024·9	30·268	30·266	39·4	39·8	1·8	1·7	6·8	7·1	83	85	6·7	5·2	6	2	4	6	13	0	0	30	1	8	4	0	0	3	3	9	3
Totals															43	32	54	50	186	0	6	358	1	79	41	11	17	95	51	48	22
Year Means	1013·3	1013·0	29·922	29·915	49·0	48·5	3·0	2·4	9·6	9·9	79	83	7·2	6·3																	

Pressure is expressed in millibars (1000 millibars = 29·531 mercury inches), also in mercury inches.

RIVER HEIGHT RECORDS REGISTERED BY THE AUTOMATIC RECORDER
AT THE GUILDHALL, YORK, 1926.

Date.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.
1	1 a.m.	above 11 3	1 a.m.	above 5 1	1 a.m.	above 3 2	noon	above 0 8	noon	above 0 6	noon	above 0 9
2	"	10 2	"	3 8	"	1 4	"	0 7	"	0 6	"	0 9
3	"	9 3	6 a.m.	3 2	noon	1 2	"	0 7	"	0 6	"	0 9
4	12 p.m.	8 3	1 a.m.	2 10	12 p.m.	1 9	"	0 7	"	0 6	"	0 9
5	5 a.m.	8 4	"	2 8	1 a.m.	1 9	1 a.m.	0 7	"	0 6	"	0 9
6	1 a.m.	6 5	12 p.m.	3 9	12 p.m.	5 6	noon	0 6	"	0 5	"	0 8
7	"	4 6	"	5 9	5 a.m.	5 10	"	0 6	"	0 5	1 a.m.	0 8
8	11 a.m.	5 3	9 a.m.	6 3	1 a.m.	4 0	"	0 6	"	0 5	noon	0 7
9	9 p.m.	6 2	1 a.m.	5 9	12 p.m.	3 6	"	0 6	"	0 5	"	0 7
10	1 a.m.	6 0	"	4 0	6 a.m.	3 6	"	0 6	"	0 5	"	0 7
11	"	4 0	"	3 3	1 a.m.	2 9	"	0 6	"	0 5	"	0 7
12	"	3 1	"	2 2	noon	2 9	"	0 6	"	0 5	12 p.m.	1 1
13	noon	2 10	noon	2 2	1 a.m.	2 8	"	0 6	12 p.m.	1 0	"	1 3
14	"	2 9	1 a.m.	2 2	"	1 10	"	0 6	noon	1 4	noon	1 3
15	"	2 9	12 p.m.	4 11	"	1 5	"	0 6	1 a.m.	1 3	12 p.m.	1 8
16	"	2 9	1 p.m.	5 3	"	1 5	"	0 6	"	1 0	6 p.m.	2 2
17	"	2 8	1 a.m.	4 0	noon	1 2	6 p.m.	1 3	"	0 10	12 p.m.	2 11
18	1 a.m.	2 8	noon	3 0	"	1 2	noon	1 3	noon	0 8	1 a.m.	2 11
19	noon	2 6	7 p.m.	2 5	"	1 2	"	1 2	"	0 7	"	2 5
20	"	2 6	12 p.m.	4 3	"	1 0	noon	1 0	"	0 6	"	1 6
21	"	2 6	7 a.m.	4 8	1 a.m.	1 0	"	11	"	0 5	"	1 3
22	"	2 6	1 a.m.	3 6	"	0 11	"	0 10	1 a.m.	0 5	noon	1 0
23	12 p.m.	7 0	"	3 5	noon	0 9	"	0 10	noon	0 4	"	1 1
24	noon	8 6	3 a.m.	2 10	"	0 9	"	0 10	"	0 5	"	1 0
25	1 a.m.	7 9	1 a.m.	2 3	"	0 9	"	0 10	"	0 5	"	1 1
26	8 a.m.	6 10	"	1 8	"	0 8	1 a.m.	0 10	7 p.m.	2 3	"	1 1
27	1 a.m.	5 0	"	1 4	"	0 8	noon	0 9	1 a.m.	1 3	"	1 1
28	12 p.m.	3 9	4 p.m.	3 7	"	0 8	"	8	6 p.m.	1 8	1 a.m.	1 1
29	"	5 1	"	"	1 a.m.	0 8	"	0 8	1 a.m.	1 7	noon	0 11
30	"	8 2	noon	"	noon	0 7	"	7	noon	1 0	"	0 11
31	2 a.m.	8 3	"	"	"	0 8	"	8	1 a.m.	1 0	"	"

RIVER HEIGHT RECORDS.

Date.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.	Time.	Above or below S.L.
1	noon	ft. in. above 0 11	noon	ft. in. above 2 7	noon	ft. in. above 2 6	noon	ft. in. above 2 6	noon	ft. in. above 2 7	noon	ft. in. above 2 8
2	"	0 11	"	2 7	"	2 6	"	2 6	12 p.m.	4 0	"	2 9
3	"	0 11	"	2 6	"	2 6	"	2 5	10 a.m.	5 3	"	2 9
4	"	0 11	"	2 6	"	2 6	"	2 6	1 a.m.	4 2	"	2 9
5	"	0 11	"	2 6	"	2 6	"	2 6	12 p.m.	8 0	"	2 9
6	"	0 11	"	2 6	1 a.m.	2 5	"	2 5	6 p.m.	9 0	"	2 9
7	"	0 11	"	2 5	noon	4	"	5 5	1 a.m.	9 0	"	2 8
8	"	1 0	"	2 5	"	4	"	4 4	"	8 0	"	2 8
9	"	1 0	"	2 4	"	4	"	4 4	"	5 6	"	2 8
10	"	1 1	"	2 4	"	3	3 p.m.	3 0	"	4 8	"	2 8
11	"	1 1	"	2 4	"	3	noon	11	"	4 5	"	2 8
12	1 a.m.	1 1	"	2 3	"	3	"	11	12 p.m.	4 6	"	2 8
13	noon	0 11	"	2 3	"	2	5 p.m.	6	6 a.m.	3 7	"	2 8
14	"	0 11	"	2 3	"	2	1 a.m.	3	12 p.m.	7 0	"	2 8
15	"	0 11	"	2 3	"	2	"	7	"	8 3	"	2 8
16	"	0 11	"	2 3	"	2	"	3	"	9 6	"	2 7
17	"	1 0	"	2 3	"	2	noon	2	6 p.m.	9 2	"	2 7
18	"	1 0	"	2 3	"	2	"	10	1 a.m.	9 9	"	2 10
19	6 p.m.	2 2	"	2 3	"	2	"	10	6 a.m.	8 9	12 p.m.	2 10
20	noon	2 2	"	2 3	"	2	"	10	12 p.m.	8 0	noon	2 10
21	"	2 2	"	2 3	"	2	"	9	1 a.m.	8 1	"	2 10
22	"	2 2	6 p.m.	3 2	"	11	"	9	"	6 2	"	2 9
23	1 p.m.	2 2	12 p.m.	3 11	1 a.m.	9	"	8	"	4 3	"	2 8
24	noon	2 2	1 a.m.	2 11	noon	2	"	8	"	3 4	"	2 8
25	3 p.m.	3 2	noon	2 10	"	1	"	7	"	2 11	"	2 8
26	1 a.m.	3 3	"	2 9	"	0	1 a.m.	7	"	2 10	"	2 7
27	"	3 3	"	2 9	"	0	noon	7	noon	2 9	"	2 7
28	"	3 3	"	2 8	1 a.m.	11	"	7	"	2 9	"	2 8
29	noon	2 10	"	2 8	noon	8	"	7	"	2 10	"	2 7
30	"	2 9	"	2 7	"	7	"	7	"	2 9	"	2 7
31	"	2 8	1 a.m.	2 6	"	7	"	7	"	2 8	"	2 7

YORKSHIRE MUSEUM, 1926.

RAINFALL IN 1926

AT CHERRY HILL, YORK.

Rain Gauge : Dia. of Funnel, 5 in. ;
Height Above Ground, 1ft. 6in.
" Above Sea Level, about 50ft.

Month	Pressure at Mean Sea Level			
	BRIGHT SUNSHINE.		Absolute.	
	Daily Mean. 1926	Per-centage. 1926 1925	Highest.	Lowest.
			Date.	Date.
	Hours.	%	mb.	mb.
Jan.	0·69	9	1032·5	991·5
Feb.	1·35	14	1034·5	991·5
Mar.	3·51	30	1030·5	994·6
Apr.	2·92	21	1024·4	989·5
May	5·55	35	1021·7	992·2
June	4·19	25	1029·4	990·8
July	5·43	33	1029·4	996·3
Aug.	6·17	42	1029·1	1000·3
Sept.	4·33	34	1029·4	999·3
Oct.	3·63	35	1035·9	982·7
Nov.	1·29	15	1024·0	966·5
Dec.	1·62	22	1045·4	1005·4
Year.	3·41	28	1045·4	966·5

Jan.	13th, 9 a.m.	3rd, 9 p.m.
Feb.	28th, 9 a.m.	2nd, 9 p.m.
Mar.	1st, 9 a.m.	4th, 9 p.m.
Apr.	5th, 9 a.m.	20th, 9 p.m.
May	23rd, 9 a.m.	30th, 9 p.m.
June	28th, 9 p.m.	10th, 9 a.m.
July	31st, 9 p.m.	24th, 9 p.m.
Aug.	28th, 9 a.m.	20th, 9 p.m.
Sept.	21st, 9 a.m.	12th, 9 a.m.
Oct.	4th, 9 a.m.	9th, 9 a.m.
Nov.	25th, 9 a.m.	20th, 9 p.m.
Dec.	{ 23rd, 9 p.m. 24th, 9 a.m.	{ 3rd, 9 a.m. 3rd, 9 p.m.
Year.	{ Dec. 23rd, 9 p.m. Dec. 24th, 9 a.m.	Nov. 20th, 9 p.m.

Month.	Total Depth.	Greatest Fall in 24 hours.		Number of Days with .01 in. or more, or .04 in. or more.	
	Inches	Inches	Date	.01 in. or more.	.04 in. or more.
Jan.	2·55	·40	28	19	19
Feb.	1·16	·27	5	14	8
Mar.	·57	·35	3	5	5
April	1·20	·22	20	12	10
May	2·55	·73	26	16	15
June	3·64	·75	14	17	14
July	2·88	·98	19	12	10
Aug.	2·90	·47	15	16	13
Sept.	·87	·30	8	8	6
Oct.	2·59	·44	8	12	9
Nov.	3·69	·65	1	18	17
Dec.	·56	·12	14	8	6
Total	25·16			153	132

ADDITIONS TO THE MUSEUM

DURING 1926.

- E. ALLEN.—Four Photographs of the Great Auk.
- D. BALFOUR & SON.—4 Fragments of Roman Pottery from near Pontefract.
- L. BEEL.—Snuff Box ; Pair of Silver Sugar Tongs, 1817.
- BERNARD BUSHELL.—Collection of Old York Keys ; Translation of the Charter of King Charles II, dated June 3rd, 1665 (and type-written copy of same), confirming all privileges, rights, etc., enjoyed by the Citizens of York.
- MISS E. CAYLEY.—Skull of small Monkey.
- WM. CLAYTON.—Old Print of St. George's Fields ; Four of S. Prout's Views of York.
- W. COAKILL.—Half-Crown of Charles I., found on allotment behind Grand Stand, York Racecourse.
- C. A. COOPER.—Two 17th century Tokens ; Sixty-two 18th century Tokens ; Fifteen 19th century Tokens.
- W. CUTTER.—Zeppelarm.
- G. R. BELL DAVIES.—Illuminated Scroll of Fame.
- T. H. ELSTOB.—Fossil Tooth ; specimen of *Cardinia listeri*.
- S. R. B. FRANKS.—A Baxstone and Wooden Muffin Turner ; Old Wooden Spoon ; Pewter Pepper Box.
- WM. CASS GRAYSON.—Farthings of York, 1814 ; Malton, 1815, and Leeds.
- W. F. GREENWOOD & SONS, LTD.—Bend of Old Drain-pipe dug up in Stonegate.
- R. HAGYARD.—Mediæval Locket-Cross found in Garden at Londesborough, Market Weighton.
- F. W. HARNESS.—Mediæval Tile and Brick ; Coin of Richard I. and two of Philip VI. of Valois.
- MISS E. HOGG.—Old Miniature in Oils on Copper.
- G. HOWARD.—7 Fragments of Green Glazed Pottery from near Micklegate Bar.
- RICHARD HOWDEN.—Old Punt Gun.
- A. HURST, A.K.C.—York Wooden Peck and Half Peck Measures marked Wm. IV. and G. IV. ; Twenty Copper Tokens.
- H. P. KENDALL.—Two York Coaching Bills, 1838.

A. W. LINFOOT.—Copper Utensil ; Flint Instrument from Acomb Bog ; Flint Awl found at Acomb Bog ; Mould found in Acomb Bog ; Copper Pan ; Wax Seal ; 14 Roman Yellow Glass Beads ; Lacquered Tin Spectacle Case and pair Spectacles ; Two old Surgical Instruments ; Leather Quiver and Arrow.

J. LITTLE.—Pair of Old Handcuffs.

J. LUND.—Mounted Specimen of Chinese Pheasant.

C. MARTIN.—Fragment of Mediæval Jar.

R. PEXTON.—Fragments of Mediæval Tiles.

DR. H. A. PHILLIPS.—Forty Roman Coins found at Hornsea.

DR. ALWYN RAIMES.—Pair of Wooden Pattens ; Alarm Gun ; Man Trap and Wolf Trap.

J. H. H. WENTWORTH RHODES.—Old Lock and Key from Great Smeaton or Brompton Church.

A. SIMPSON.—Old Mousetrap.

CHAS. HY. SIMPSON.—Copper Token.

SYDNEY H. SMITH, F.Z.S.—Brass Paraffin Lamp Filler ; Salmon Cleek and Old Tobacco Box ; Flounder Spear ; Auger or Eel Spear ; Old Flint-lock Poaching Alarm Gun ; Two Punt Guns, once the property of Snowden Slights.

W. H. ST. QUINTIN, D.L., J.P.—A Vivarium ; Pair of Common Snipe ; Pair of Jack Snipe.

MISS EDITH M. THOMPSON.—Water Colour Sketch of the Fire Ball.

JOHN VILLIERS.—Fragments of Roman Pottery from Gate Helmsley.

MISS WALKER.—Bottom Stone of Pot Quern.

R. HALL WARREN.—3 Bristol Delft Plates.

A. WATERMAN.—2 Aboriginal Letter Sticks.

MISS E. WINTER.—Straw Bonnet, once the property of Mrs. Sarah Hill, of Wetherby (b. 1803), who wore this on her marriage ; Sampler by Mary Chambers, dated March 13th, 1818.

C. ZIMMERMANN.—Antique Bone-holder.

ON LOAN.

A. W. LINFOOT.—Roman Yellow Glass Beaded Necklace.

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DURING 1926.

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——“ The Birds of Sherwood Forest,” by W. J. Sterland.

——“ Guide Book to York Minster,” by the Rev. F. Harrison, M.A., F.S.A.)

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- Sclavonian Grebe. Country Life, 1926 (Feb. 27), p. 321.
- Rooks and Egg-thieving. Ibid. (March 27), p. 495.
- A New Sub-species of Starling. Ibid. (May 1), p. 683.
- A Bird and a Tree. Ibid. (June 19), p. 887.
- The Natural Food of the Pheasant. Ibid. (July 17), p. lxi.
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- Sea-birds : Their Relation to the Fisheries and Agriculture. Nature, 1926 (Dec. 25th), pp. 920-921.
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PROCEEDINGS
OF THE
YORKSHIRE
PHILOSOPHICAL SOCIETY.

PAPERS

RELATING TO THE

Antiquities and Natural History of Yorkshire, etc.,

READ AT THE MONTHLY MEETINGS OF THE SOCIETY

DURING 1926.

PRINTED BY ORDER OF THE COUNCIL.

1927.



PROCEEDINGS
OF THE
YORKSHIRE PHILOSOPHICAL SOCIETY,
1926.

FEBRUARY 1ST.—Col. W. A. White occupied the chair.

The Keeper read the minutes of the previous meeting, and announced the Donations to the Museum and Library.

The following Communications were then read:—

PRIMITIVE BREEDS OF SHEEP.

BY DR. J. S. GAYNER.

The Mountain sheep of these islands show great variety of form and even colour. Is there a character, which they have in common, save their ability to live on the poorest fare and endure wet and cold? They may be black-faced and horned, as the “Scotch”; or white-faced and poled, as the “Cheviot”; long-tailed as the Welsh Mountain sheep; or short-tailed as the “Dartmoor.”

I think a common character may be found in those patches of dun coloured hair, which sheep of all these breeds show on their faces. And if the “Cheviot” seem an exception to the rule, it is one of recent origin; for as late as the end of the 18th Century, dark faces were as common among them as light, and many showed the pale fawn-coloured face of the old, and now extinct breed of Forest Sheep: once the commonest sheep in England.

Let us carry our search for a really primitive sheep, northwards and westwards, out into the Atlantic in fact, 40 miles

west of North Uist in the Hebrides, to St. Kilda and the rock, which forms the island of Soay. And if we are both courageous and lucky, we may be able to land on Soay, and see the little sheep, which are the object of our search. For of these sheep, Professor Cossar Ewart has declared, that they so closely resemble the wild sheep of Corsica in skeleton, and horns and throat-fringe, as to be almost indistinguishable from them. Confined through countless generations to a small island and enduring the gales and storms of the Atlantic, they have developed a fleece of soft wool, so fine and so full of wool-fat (lanolin), that in cleaning a fleece, it loses nearly half its weight. And in these tiny sheep of Soay, I think we may well recognise the ancestral type of all our many breeds of sheep.

Thanks to the generosity of the President, Mr. W. H. St. Quintin, the Museum of the Yorkshire Philosophical Society is able to display among the treasures on view in its galleries, a remarkably fine head of an imported Soay Ram.

AN IRISH STONE DRINKING-CUP.

BY DR. WALTER E. COLLINGE, F.S.A.

Very few Irish stone drinking-cups have come down to the present time, indeed they are exceedingly rare. A note therefore on one in the Robinson Collection in the Yorkshire Museum, may be of interest.

The specimen is formed out of a piece of impure potstone and measures in its greatest diameter, including the handle, $6\frac{1}{4}$ ins., the maximum diameter of the bowl is $5\frac{1}{8}$ ins., height $2\frac{5}{8}$ ins., and the depth of the cup $1\frac{3}{4}$ ins. The handle is hollowed out both above and below, and there is a small hole piercing the base.

A somewhat similar specimen, but slightly smaller, is described by Wilde in his catalogue of the Antiquities in the Museum of the Royal Irish Academy, as "this great rarity."

MARCH 1ST.—Dr. J. S. Gayner in the chair.

The Keeper read the Minutes of the previous meeting and announced the Donations to the Museum and Library.

The following Communications were then read :—

TWO NOTES ON THE HISTORY OF THE DRAMA IN YORK IN THE REIGNS OF ELIZABETH AND JAMES I.

BY THE REV. A. RAINE, B.A.

YORK MINSTER AND THE DRAMA.

As is well known, in the reign of Queen Elizabeth, travelling companies of players visited York, and by permission of the civic authorities gave performances in the city, usually in the Common Hall in Coney Street. Robert Davies, formerly Town Clerk of York, has told us the names of some of these companies, and further information is to be found in Chamber's great work on the Elizabethan Drama. But it is not generally known that many of these companies also gave performances in the Minster Close and were paid by the Dean and Chapter to do so. I now give a complete list taken from the Chamberlain's Books, preserved in the Zouche Chapel, of the companies that performed before the Dean and Chapter, together with the payments made to them.

“ 1576 Item given to my L. Therle of Essex his men players XXs.

“ Item to my L. Stafford men players XXs.

“ Item given to Lancashyre men players Xs.

“ Item given to the Scollers of the Horsefaire players XXs.

As I have mentioned in my History of St. Peter's School—Lord Stafford's players are not mentioned elsewhere and were probably but a short-lived company. The 'Earl of Essex players' should be the 'Countess of Essex players.' The Lancashyre men players cannot be identified. The 'Horsefaire scollers' are the boys of St. Peter's School.

- “ 1581 Item gyven to my L. Stafford's men plaiers XXs.
- “ 1584 Item given to the Q mats (Queen's majesty's) men players XLs.
- “ 1587 Item given to my L. therle of Essex men players XLs.
- “ 1592 Item the xxiiiith of Julie given to hir mats men players XXs.
- “ 1593 Item the second of September given to hir mats men players XXs.
- “ 1596 Item to her mats men players XXs.
- “ 1597 Item the vth of Februarie to players of Mr. Doctor Bennitts XVs.
- This I believe was a local company.
- “ 1600 Item the 5 of ffebruary 1599 to the Lo. Sudders men players XXs.”

The Dean and Chapter patronized music as well as acting. An entry for 1590 “ Item to hungaryons XXs ” may lead us to suspect that here we have something like a “ German Band.” The same year and also in 1591 on the Queen's Birthday, November 17th, the Chapter paid Xs “ to thos that played upon Sagbutts and Cornitts.” In 1595 Vs was given to William Hewitt, a “ musitian ” and in 1600 XIIIs IIIId was paid to the “ Waites for their musicke ” at a Service in the Minster, when the Earl of Marr, Ambassador from Scotland, was present.

With regard to the encouragement given to acting in Elizabeth's reign the Dean and Chapter were just continuing the mediæval tradition. In pre-Reformation times the Minster Gates was one of the places assigned for the performance of the York Corpus Christi Plays and members of the Chapter had a special platform erected from which they viewed the performance. The occurrence of the word “ actors ” in the Chamberlain Rolls in connection with celebrations on the Feast of the translation of St. William suggests that dramatic representations of incidents in the Saint's life were given, if not in the Minster itself, at any rate within the Precincts. The Ceremony of the Boy Bishop was pure acting, so the Dean and Chapter in

Elizabeth's time merely maintained the old close connection between religion and drama. Puritanism had not yet come with heavy hand to crush gaiety out of Religion. It is probable that if this connection could have been kept up we should not have had that degradation of the Theatre under Charles II. nor would the Church have lost the human touch in the way it did.

AN EARLY YORK PLAYHOUSE.

Before a company of travelling players could perform in the city of York, they had to obtain permission from the City authorities.

Corporation Minute Book xxxiii. 90. 1607 23 Sept. "The Quene's Maties (Majesty's) players have maide suite to this court that they might be permitted to plaie in this cittie and showed a licence from her Matie that they maie be permitted to plaie in all cittyes, and townes corporate, it is agreed that they shal be permitted to playe in this cittie so as they do not plaie on the Sabaoth daies and on the nightes."

These plays would generally be performed in the Common Hall in Coney Street, though in 1592 the Queen's Players occupied St. Anthony's Hall for some time as a regular Theatre. There was no such thing as a Playhouse in York, a building erected for the sole purpose of giving plays. One was erected in 1609, but as it was built without permission, it had to be closed. It was built by Richard Middleton, a citizen of York.

Richard Middleton was a son of George Middleton, and was baptised at St. Martin's, Coney Street, June 11th, 1584. We know little about him. On one occasion he was presented at the Visitation, for non-attendance at Church; he buried a daughter at All Saints, Pavement, Dec. 12th, 1609; he died himself, in 1624. In 1608, he printed at London a little volume of "Epigrams and Satyres." One copy alone is known to exist, and this was in the library of William Drummond, of Hawthorndene, the poet, and was presented by him with many other books, to the University of Edinburgh. The book is dedicated 'To the Gentleman of condigne desert, William Bellasses.'

Here are the documents from the Corporation Minute Books, No. xxxiii., 173. 1609, 22 Sept. Upon a petition preferred by Richard Middleton and others, wherein they requested that they “might be permitted to erect a theater or playhouse, within this citty wherin such as have bene borne and brought upp therein should imploy ther laborious expenses for the maintenance therof which might be a meanes to restrayne the frequent comminge herunto of other stage plaiers, and they would yield X li. per annum unto this Corporacion ; it is therefore thought good and agreed by this Court that thes saide requestes shalbe graunted unto them upon suche condicions as shalbe agreed upon hereafter by this Court.”

Minute Book xxxiii. 187. 1609. 11 Dec. “Wheras Richard Middleton and others did heretofore of late make suite unto this court that they might be permitted to erect a theater or playhouse within this cittie, and this court then takeinge consideration upon ther requestes did thinke good that before they should begyn to erect the same playehouse ther should be some condicions considered upon by this court which they should on ther parte performe. and forasmuch as this court doth understand that they have erected a theater or playhouse in this cittie and have not attended this court to have receyved dyreccions upon what condicions they might have bene permitted, and have drawne unto ther companyes straingers that did inhabitt in the countrie, and likewise some of manuell occupacions in this cittie who do intend to give over ther occupacions and fall to an idle course of life, it is nowe thought good and agreed by this court for that they have proceded in such sorte as aforesaide, that they shalbe discharged for kepeinge of anie play-house in this cittie as they will answere at their owne perells.”

According to Mr. George Benson, when the Market House in the Thursday Market was completed in 1705, the upper part of it was often used for performances of acting. The first actual Theatre seems to have been the one built in 1734, to the North West of the Minster.

THE EARLIEST EXTANT COMMERCIAL TREATY WITH AN ENGLISH KINGDOM.

BY DR. J. S. GAYNER.

In his book "Alcuin of York," published by the S.P.C.K., in 1908, Bishop Forrest Browne writes of a Treaty between Charlemagne and Offa as "the earliest extant commercial treaty with an English kingdom." The date of the treaty is 796, four years before Charlemagne was crowned in St. Peter's 'Imperator and Augustus,' but when he was indeed king, not only of the Franks and Lombards, but of Spain as far as the Ebro and Saxony as far as the Elbe. Offa, King of Mercia, ruled from 757 to 796. This Anglian Kingdom was originally limited to the district round Lichfield and the upper Trent Valley. The treaty is in the form of a letter from Karl to Offa. and of its many clauses I will quote two only.

1.—"With regard to the black stones which your Reverence earnestly solicited to have sent to you let a messenger come and point out what kind they are that your mind desires. Wherever they may be found we will gladly order them to be given and their conveyance to be aided."

2.—"But as you have intimated your desire as to the length of the stones, our people make demand about the length of cloaks, that you will order them to be made to the pattern of those which in former times used to come to us."

The translations I quote are from "Alcuin of York," and in connection with Clause 1 above, Bishop Forrest Browne comments: "It may be supposed that Offa was engaged in building an abbey church at St. Albans.....The black stones may have been wanted for pavements." Now, the mind episcopal may be supposed to have a bias towards matters ecclesiastical, and I think it is apparent that these portions of the treaty deal neither with matters of religion, nor with matters personal to Offa, both of which have indeed found mention in earlier clauses of the treaty, but deal with matters which affect the subjects of each. And I suggest

that it is with the food and clothing of the people that these two clauses are concerned. Meat and raiment are old associates in the public interest, and so remain ; and we may fairly credit the subjects of Charlemagne and Offa with at least allied interests. What then are the black stones which Charlemagne's people were to supply to Offa ? Not paving stones, but, I suggest, millstones. Stones for the querns or hand-mills so familiar in mediæval times. And at Mennig, near Andernach on the Rhine there have been most important quarries of a superior millstone from the time of the Romans down to our own day. The rock is a lava, easily recognisable. And the Museum of the Yorkshire Philosophical Society possesses many fine examples of millstones made of this rock. As an imported rock it would be relatively costly, and the heavier nether-millstone is often made of some local stone such as the Millstone Grit, while the upper is made of the fine lava from near Andernach. I suggest Offa's black stones were for manufacture into querns, not to use as paving stones.

OCTOBER 4TH.—Dr. J. S. Gayner occupied the chair.

The Keeper read the Minutes of the previous meeting and announced the Donations to the Museum and Library.

The following Communication was then read :—

TECHNICAL NOTES ON THE ST. WILLIAM WINDOW IN YORK MINSTER.

BY JOHN A. KNOWLES, F.S.A.

On either side of the Choir as you stand facing the High Altar are two great windows. The one on the left is the St. William window, which dates about the year 1421. It is one of the finest works ever executed in glass-painting, not only at York, but anywhere else. This statement is not made in that indiscriminate spirit, which, under the name of appreciation, praises everything, whether good or bad, which was executed in the Middle Ages. For there is plenty of inferior work in the Minster. The St. William window has that spark which we

call genius about it, and is certainly a finer work than the St. Cuthbert window opposite, though it was erected some twenty-five years or so earlier. A close study of the window reveals many evidences of how the ancient glass painters went about their work.

As would be expected in a window of such gigantic size—it contains 105 panels—several hands have been at work and these have not all been of the same degree of artistic skill or technical accomplishment. There have been at least three designers. The first, who was probably the master, drew some of the finest panels, such as St. William in solitude and the Saint received by the King of Sicily. This artist was particularly fine at drawing horses; his composition is fine, and the grouping of the background figures is beyond praise. But there was another who was not so accomplished, and finally a third—probably an apprentice-designer—who worked by piecing together various figures and details from panels in other parts of the window, from the cartoons of the master. Thus the panel which represents St. William lying-in-state, is made up of figures, heads, and what not, which appear elsewhere.

Similarly the work of at least two figure painters who painted heads, can clearly be distinguished. The first obtained modelling and expression with a minimum of effort and labour. Heads such as those of the King of Sicily and many more, are marvels of simplicity and directness. The second artist was laboured and inclined to over-emphasise the modelling. The difference between the two is the more striking, as in one case they have each painted a head from identically the same drawing. There were also two ornamental painters. The first had a wonderful feeling, for what, in art language is called 'growth.' The other's scrolls and foliage diapers are lame and awkward.

To economise time and labour, many drawings, after having been used once to represent some subject, have been slightly changed and then repeated with a different colour scheme, so as to represent another and totally different subject. Thus panel 68 represents a mother who has brought her sick child to the shrine and propped him up against a buttress, whilst she prays for his recovery. By eliminating the figure

of the child and painting spots all over the face and hands of the mother, we get another subject representing a leprous woman cured at the shrine. Many more examples of similar economies are to be seen in the window. This practice was not, however, confined to glass-painting. The best men did it. Van Dyke painted bodies all alike to which he subsequently added heads. The first became 'Madam Kirk,' the second 'Lady Poulett,' and so on.

There is some ground for believing that John Thornton, who completed the great East Window in 1408, had a very considerable hand in the St. William window. It was erected about 1421, and it is certain he can have had nothing to do with the St. Cuthbert window, 1445, as it is far inferior. When Thornton completed the Great East Window, he evidently left the employ of the Dean and Chapter, and set up in business for himself. In 1410, he was made a Freeman of the City, for which honour he would not be eligible whilst he was in the employ of the Chapter. He was alive in 1433, in which year the Chapter paid for repairs to his house. Had he been alive in 1445, he would certainly have been entrusted with the St. Cuthbert window, for Cardinal Longley, who paid for it, had been Dean of York at the time the agreement with Thornton was drawn up.

NOVEMBER 1ST.—Dr. J. S. Gayner occupied the chair.

The Keeper read the minutes of the previous meeting, and announced the Donations to the Museum and Library.

The following Communications were then read:—

THE WORK OF THE GEOLOGICAL SURVEY IN YORKSHIRE.

BY C. E. N. BROMEHEAD, B.A.

The first suggestion for the making of a geological map is found in a treatise submitted to the Royal Society, in 1683, by Dr. Martin Lister, a York physician. The idea was gradually

developed, and much of William Smith's work was connected with Yorkshire, but it was not until 1851, that the first map covering any part of Yorkshire, was issued by the Geological Survey. Now maps on the 1-inch to the mile scale are obtainable for the whole, and on the 6-inch scale for a great part of the county; for the eastern half the 1-inch maps are mostly colour-printed and sold at 2/- per sheet covering 216 square miles, but for the coalfield these sheets are all hand-coloured: the price of these varies up to 10/-, though the cost of colouring may amount to as much as £15; they were mostly altered or revised between 1870 and 1888.

In 1923, a revision of the Yorkshire coalfield was begun, and early in 1925, a branch office of the Geological Survey was opened at 14a, Parliament Street. The mapping of the 1-inch sheet 77, Huddersfield, is now completed, and it is hoped that the colour-printed map with an explanatory memoir will be issued in 1927. Of the 6-inch maps, several quarter-sheet (6 sq. miles) are already published, price 2/3: these are uncoloured, but the geology is clearly printed in blue over the black topography. Specimens of these maps were shown, together with a set of maps showing their construction from the time that the geologist enters the ground to the completion of the printed map.

Other work carried on by the survey is the collection of fossils and the photography of interesting geological features of all sorts: albums of prints and a selection of lantern slides were shown: copies of all such photographs can be obtained for teaching or other purposes. In the palæontology, the chief work has been the application to the Millstone Grits of the goniatite zones established by Bisat: specimens and drawings of the more important forms were shown.

Apart from the area under revision at the moment, the work of the Survey consists of the collection of geological information of all sorts, and the making of this information available for well-sinkers, engineers, and others interested. An important memoir recently issued, deals with the concealed coalfield of Yorkshire, Derby and Notts., and brief accounts of the work accomplished are published annually in the "Summary of Progress."

THE EXCAVATIONS NEAR THE MULTANGULAR TOWER, 1926.

BY THE REV. A. RAINE.

The main object of the York Roman Excavation Committee during the summer of 1926, was to completely clear the newly discovered eastern corner Tower of the fortress of Eburacum. This was successfully accomplished and there was revealed a structure of great historical interest, a full account of which will be published by Mr. S. N. Miller, during the coming summer. In addition to this work, excavations were carried out in the Museum Gardens, by the kind permission of the Yorkshire Philosophical Society, who also contributed generously towards the funds.

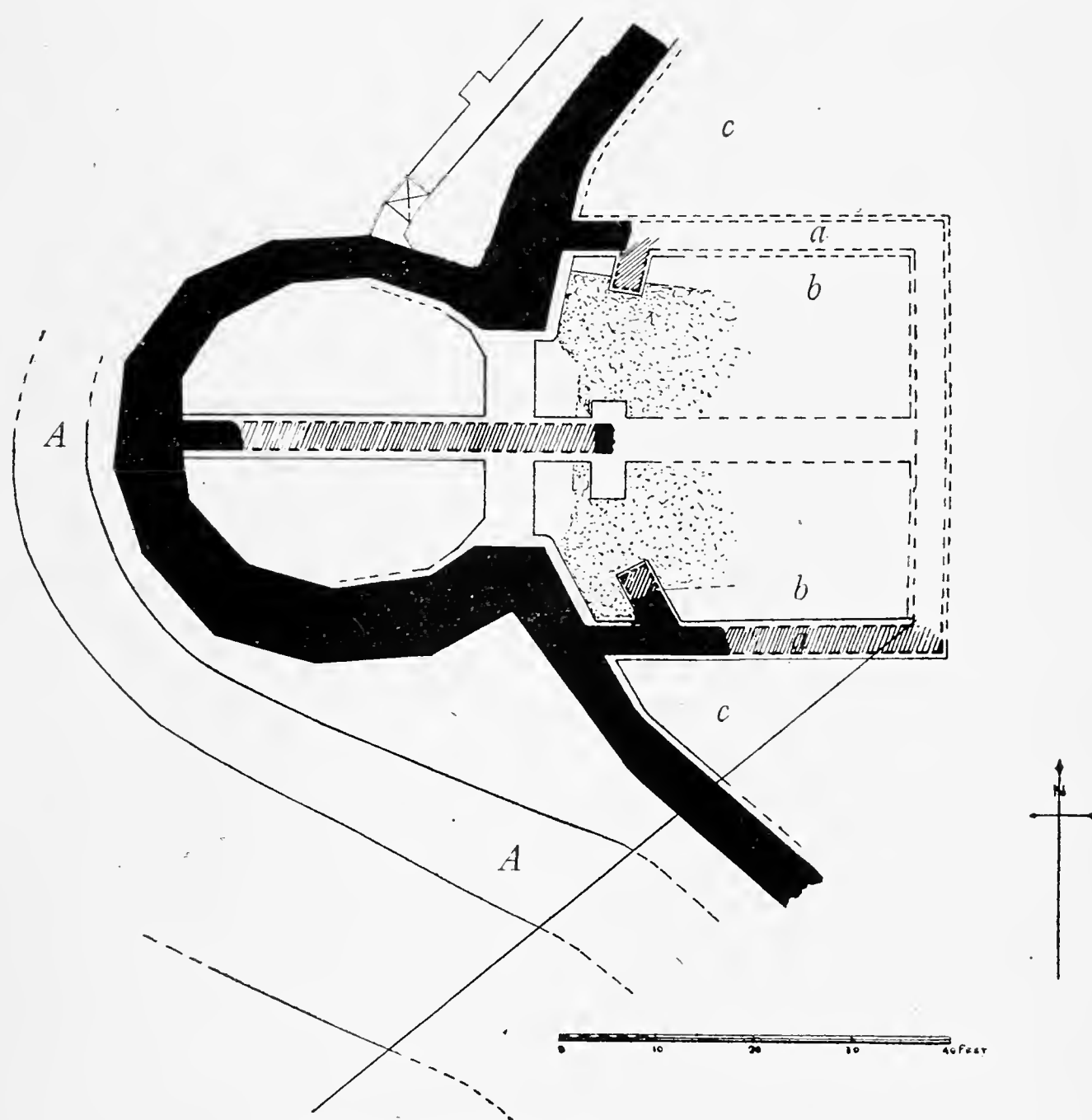
The objects which prompted the work in the Museum Gardens, were three in number.

- i.—To get the relation of the late wall in the Museum Gardens to the earlier defences discovered at Aldwark.
- ii.—To decide whether the Multangular Tower and the adjacent length of wall formed a homogeneous structure of the same date.
- iii.—To ascertain, if possible, what that date was.

1. The relation of the earlier defences in Aldwark to the later defences in the Museum Gardens, was not ascertained. Remains of wood piles of various lengths and also a mass of disintegrated concrete were found about 20 feet outside the existing 4th century wall. These remains may possibly have formed part of the earlier defences, the piles corresponding to those found under the two walls in Bedern, but they can hardly have been *in situ*. The ground here had been greatly disturbed by mediæval builders.

2. From the course of the late ditch *AA*, it was found that the Multangular Tower was built at the same time as the adjacent stretch of wall. This evidence is quite decisive.

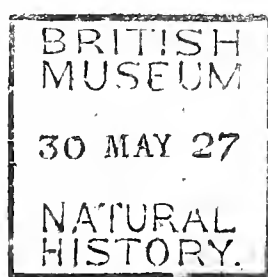
3. The Pottery found in the late ditch indicated that the date of the Tower and Wall could not be later than the beginning of the fourth century, *i.e.*, to the time of Constantius, the father of Constantine the Great.



PLAN OF ROMAN MULTANGULAR TOWER.

In working out 2 and 3 it was rendered possible to define more clearly the original plan of the Multangular Tower and also to examine the wall adjoining. The wall had had a bank of sand and clay behind it, and was not faced on the inside. Where examined, it did not rest on piles, but was laid direct on the boulder clay. It was found that the Multangular Tower had been entered from the inside between wing walls *a a*, which had retained the bank on either side. This entrance was floored with concrete, no doubt to serve as a platform for

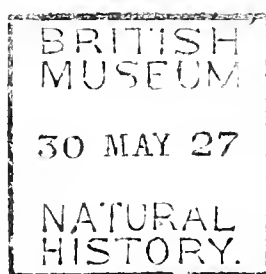
mounting munitions and artillery on to the Tower. This concrete did not quite reach to the wing wall on either side, the remaining space of a few feet *b b*, consisting of soft sand, which must have been covered by some structure, probably by a staircase attached to the inside of each of the wing walls and leading up to the rampart walk *c c*. This rampart walk, which would run along the top of the bank, had been carried round the corner on an archway, through which the basement of the tower was reached.





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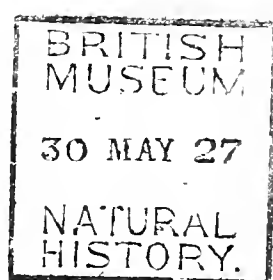






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WALTER E. COLLINGE,
Keeper of the Museum.

APRIL, 1927.

